[Title of Document]   Specification

[Title of the Invention]   AUTOMATIC AUCTION METHOD

[Scope of Claim for a Patent]

[Claim 1]

5   A method of participation information delivery in an automatic auction system, characterized in that said method comprises the steps of:

displaying information about auction received via an on-line circuit;

10   selecting an auction subject specified by an operator out of displayed subjects;

creating, for said selected subject, auction ordering information including a desired price, number of purchase, and a highest possible price in competi-

15   tion for the desired price; and

transmitting said ordering information to an auctioneer terminal.

[Claim 2]

A method of participation information

20   delivery in an automatic auction system according to claim 1, characterized in that for each of selected subjects, a flag specifying whether participation in the auction should be conducted after effecting a successful bid once is added to said ordering informa-

25   tion and transmitted.

[Claim 3]

A method of participation information delivery in an automatic auction system according to claim 1, characterized in that said number of purchase
5 is specified by any one method selected out of constant quantity designation, quantity range designation, and remaining quantity designation.

[Claim 4]

A method of participation information
10 delivery in an automatic auction system according to claim 1, characterized in that a flag specifying whether purchase should be conducted even if the number of purchase is less than a desired amount is added.

[Claim 5]

15 An automatic auction method characterized in that said method comprises the steps of:

(a) collecting a plurality of auction ordering information pieces each including a desired price, number of purchase, and a highest possible price in
20 competition received via on-line circuits;

(b) setting an auction price;

(c) determining whether there is an auction ordering information piece having a desired price coinciding with said set auction price;

25 (d) if there is an auction ordering information piece in the step (c) and number of purchase is satis-fied for the ordering information piece, settling the

transaction(s), lowering said auction price, and then proceeding to the step (c), and

if there is an auction ordering information piece in the step (c) and number of purchase is not

5 satisfied for the ordering information piece, raising said auction price, and then proceeding to step (f);

(e) if there are no auction issues in the step (c), lowering the price, and proceeding to the step (c) again;

10 (f) determining whether there is an auction issue satisfying the condition by comparing the set auction price with sum of said desired price and said highest possible price in competition;

(g) if there is an auction issue in the step

15 (f) and the desired amount is satisfied, settling the transaction(s) and proceeding to the step (c),

if the condition of the step (f) is not satisfied, raising the price and proceeding to the step (f); and

20 (h) conducting an auction by repeating processing of said steps (c) to (g) until subject products are exhausted or a fixed price is reached.

[Claim 6]

An automatic auction method according to

25 claim 5, characterized in that said number of purchase is specified by using the constant quantity designation or the quantity range designation, and

in said step (c), an auction issue is judged to be present if the remaining quantity of the product is equal to or greater than a lower limit value in the case of the quantity range designation, and an auction

5 issue is judged to be present if the remaining quantity of the product is equal to or greater than a desired quantity in the case of the constant quantity designation.

[Claim 7]

10 An automatic auction method characterized in that in the step (d) of claim 5, ordering issues each with an amount condition specified by the all amount are referred to as all amount bidders, ordering issues each with an amount condition specified by a fixed

15 amount are referred to as fixed amount bidders, and ordering issues each with an amount condition specified by a quantity range designation are referred to as variable amount bidders, and

the desired quantity is judged to be satis-
20 fied, if sum of:

sum total of numbers of purchase of said fixed amount bidders;

sum total of lower limit values of desired ranges of bidders included in said variable bidders and
25 having nonzero lower limit values of desired ranges (hereafter referred decided variable bidders);

number of bidders included in said variable

bidders and having zero lower limit values of desired

ranges (hereafter referred undecided variable bidders);

and

number of all amount bidders

5   is less than or equal to a current remaining quantity.

[Claim 8]

An automatic auction method according to

claim 7, characterized in that in case where the

desired quantity is not satisfied, the desired quantity

10 is judged to be satisfied, if sum of:

sum total of numbers of purchase of said

fixed amount bidders;

sum total of lower limit values of desired

ranges of decided variable amount bidders (hereafter

15 referred to as imperfect amount rejection bidders)

obtained by excluding bidders permitting purchase of

an amount less than the amount of purchase (hereafter

referred to as imperfect amount permitting bidders)

from said decided variable bidders;

20   number of said imperfect amount permitting

bidders;

number of said undecided variable bidders;

and   number of said all amount bidders

is less than or equal to a current remaining quantity.

25 [Claim 9]

An automatic auction method characterized in

that said steps (d) and (g) of claim 5 comprise the

steps of:

allocating the product of said constant quantity to said fixed amount bidders, and allocating the product of the lower limit value of the desired

5 range to said decided bidders; and

if the product remains, and there are somebodies among said all amount bidders, said decided bidders, and said undecided variable amount bidders,

allocating the product to the bidders so as

10 not to exceed the desired quantities for said decided bidders and said undecided variable amount bidders, and so as to allocate equal quantities to the bidders, and thereby settling the transaction.

[Claim 10]

15 An automatic auction method characterized in that said steps (d) and (g) of claim 5 comprise the steps of:

allocating the product of said constant quantity to said fixed amount bidders, and allocating

20 the product of the lower limit value of the desired range to said imperfect amount rejection bidders; and

if the product remains, and there are some-bodies among said all amount bidders, said decided bidders, and said undecided variable amount bidders,

25 allocating the product to the bidders so as not to exceed the desired quantities for said decided bidders and said undecided variable amount bidders, and

so as to allocate equal quantities to the bidders, and thereby settling the transaction.

[Claim 11]

An automatic auction method characterized in that in the step (g) of claim 5, if a rise of the price has exceeded a predetermined fixed value in the step (g), the transaction is settled by allocating the product to bidders in competition according to a fixed procedure.

[Claim 12]

An automatic auction method characterized in that in the step (g) of claim 5, if bidders disappear as a result of a price rise, the transaction is settled by allocating the product to bidders in competition in an immediately preceding price state according to a fixed procedure.

[Claim 13]

An automatic auction method according to claim 11 or 12, characterized in that said fixed procedure comprises allocating the product to fixed amount bidders, and said decided bidders, in a descending order of the constant quantity of fixed amount bidders and the lower limit value of the desired range of said decided bidders.

[Claim 14]

An automatic auction method according to claim 13, characterized in that said fixed procedure

further comprises allocating the product in the order
of registration time of said ordering information if
the constant quantities of said fixed amount bidders
and the lower limit values of the desired ranges of
5 said decided bidders are the same.

[Claim 15]

A medium for recording a program, said
program creating information for participating in an
electronic auction by using a computer, said program
10 conducts processing, characterized in that said
processing comprises:

displaying information about auction received
via an on-line circuit;

selecting an auction subject specified by an
15 operator out of displayed subjects;

creating, for said selected subject, auction
ordering information including a desired price, number
of purchase, and a highest possible price in competi-
tion for the desired price; and

20 transmitting said ordering information to an
auctioneer terminal via an on-line circuit.

[Detailed Description of the Invention]

[0001]

[Technical Field Pertinent to the Invention]

25 The present invention relates to an auction
method using a communication network. In particular,

the present invention relates to an automatic auction method whereby purchasing persons located in remote places participate in a transaction by sending auction ordering information to an auctioneer via an open

5 communication network represented by the Internet and an auction is automatically conducted on the basis of the auction ordering information.

[0002]

[Related Art]

10 Wholesale marketplaces serve as places for making distribution of fresh foods and the like smooth and making transactions of them proper. In particular, prices formed in wholesale marketplaces exert great influences on the growing areas and consumption. In

15 the wholesale marketplace system, therefore, prices need to be formed by quick and fair valuation based upon the supply-demand relations of the fresh foods. Accordingly, purchase and sale transactions in whole-sale marketplaces are conducted by the "auction or

20 sealed bid" in principle.

[0003]

As against such a principle, opaque trans-action forms such as the "receipt in advance" (the wholesale before the sale start time) have become the

25 mainstream instead of the marketplace transactions as a result of the increase in scale of growing areas, the increase in distance from growing areas, the increase

in scale of retail departments, and the progress of intensiveness of the retail departments.

[0004]

In order to destroy such a status quo, "information transactions" using advance shipping information given from shipping persons are now under study in various places. As one form realizing this information transaction, a system is shown in JP-B-7-117976. In this system, shipping information given from shipping persons is provided to wholesalers and bidders, the wholesalers and the bidders conduct a bid on the basis of the shipping information, and a wholesaler or a bidder of the highest price makes a successful bid. As a method for mechanically conducting transaction processing which relates to the information transactions, there is a mechanical auction ("Is there a future in wholesale marketplaces," edited by Shigeo Akitani/Food distribution study society and published by Japan economic newspaper company in 1996, p. 143). In the mechanical auction, all purchasing persons gather around a marketplace, and presents desired prices from respective terminal devices. Besides this, the mechanical auction described in this paper provides the following function. Even if a certain person is not present in the marketplace, the person can effect a sealed bid at the time of the auction so long as the person inputted beforehand

desired quantities and desired prices for a desired list of articles.

[0005]

[Problem to be solved by the Invention]

5   In the former cited JP-B-7-117976, mechanization of a sealed bid is described. In the mechanical auction of the latter cited paper, auction mechanization is described. In the case where the latter cited auction mechanization is employed, price presentation

10   needs to be conducted between the bidder and the auctioneer several times until the end of the auction. At the time of the auction, a person needs to stay before an auction terminal device and form a judgment and give instructions according to the situation.

15   Furthermore, in the case of an auction, bidders must cope with the present situations extemporaneously. Therefore, the bidders must participate on-line and in real time.

          An object of the present invention is to

20   solve the problems of the conventional technique and provide an automatic auction method which makes it unnecessary for the bidders to stay before terminal devices at the time of execution of an auction.

          Another object of the present invention is to

25   provide an automatic auction method which makes possible auction transactions on open networks such as the Internet.

Another object of the present invention is to provide an automatic auction method whereby auction prices can be automatically determined.

[0006]

5 [Means for Solving Problem]

In order to achieve the above described objects, an auction is executed by the following procedure in a system in which bidder terminals are connected to an auctioneer terminal via on-line

10 circuits.

On bidder terminals, information about auction received from the auctioneer terminal via on-line circuits is displayed. This information about auction may be procured spontaneously by the bidders

15 via the Internet or personal computer communication, or may be forcibly sent to bidders by the auctioneer via electronic mail.

[0007]

On bidder terminals, information about

20 auction is displayed. An auction subject is selected by each bidder (terminal operator). For the selected auction subject, the number of purchase, a desired price, and highest possible price in competition for the desired price (a variation value indicating an

25 addition allowed for the desired price) are specified on the screen by the bidder. Auction ordering information containing these information pieces is created,

and transmitted to the auctioneer terminal.

The display and information inputting on the bidder terminal can be implemented by using, for example, the browser broadly known in the Internet. A plurality of inputted information pieces may also be sent to a server by using the function of the known browser.

[0008]

For each of selected auction subjects, a flag specifying whether participation in the auction should be conducted after effecting a successful bid once, or a flag specifying whether purchase should be conducted even if the number of purchase is less than a desired amount can be added to the ordering information. The number of purchase can be specified by any one method selected out of constant quantity designation, quantity range designation, and remaining quantity designation.

[0009]

The auctioneer terminal collects and stores a plurality of ordering information pieces received via on-line circuits such as the Internet. These ordering information pieces have been sent from a plurality of bidders. At the auction start time, for example, such as 10 a.m. everyday, an auction is started. At the auction, a price is first set. As for this price, an initial value for starting the auction may be inputted. Subsequently, the stored ordering information pieces

are searched for a desired price coinciding with the set price. If there are auction issues, those transactions are settled. Otherwise, a price is reset.

[0010]

5   As for the price resetting, the price is lowered in the case where there are no auction issues (i.e., in the case of noncompetitive state). In the case where the amount does not satisfy auction issues (in the case where (the amount which can be auctioned)

10   < (auction issues), i.e., in the case of the competitive state), the auction price is raised. It is determined by effecting a comparison with the desired price whether there is a coinciding auction issue. In the case of the competitive state, however, it is

15   determined by comparing (the set auction price) with ((the desired price) ± (highest possible price in competition)) whether there is an auction issue satisfying the condition.

      Until all auction issues are sold or a fixed

20   price is reached, such processing is repeated.

[0011]

      The processing to be executed on the bidder terminals and the auctioneer terminal can be implemented by using computer programs. These programs can

25   be stored on a storage medium such as a floppy disk, an optical disk, or a hard disk, and can be distributed via a network.

[0012]

[Mode for Carrying out the Invention]

Hereafter, embodiments of the present invention will be described in detail by referring to

5 drawing.

[0013]

FIGS. 1 and 14 through 18 show processing flows of the present embodiment. FIG. 2 is an entire configuration diagram of a system of the present

10 embodiment. FIGS. 3 through 13 show screen images of the present embodiment.

[0014]

First of all, the entire configuration diagram of an automatic auction system shown in FIG. 2

15 will now be described.

[0015]

In the automatic auction system of the present embodiment, an electronic marketplace server 11, a plurality of purchasing person clients 12, and a

20 plurality of shipping person clients 13 are linked via a communication network 14. The electronic marketplace server 11 conducts collection and management of product information sent from the shipping person clients 13 and auction ordering information sent from the pur-

25 chasing person clients 12, and conducts auction on the basis of the auction ordering information. The purchasing person clients 12 issue product orders to

the electronic marketplace server 11. The shipping person clients 13 provide the electronic marketplace server 11 with product information of shipped products. As the network 14, a personal computer network using a LAN, the Internet, or a public telephone network, or an arbitrary different wire or wireless network can be used.

[0016]

(1) Device configuration of electronic marketplace server 11

The electronic marketplace server 11 is a device for auction. As for the configuration, an input device 112, an output device 113, a storage device 114, and a communication table 115 are connected to a computer 111.

[0017]

The input device 112 is a device, such as a keyboard or a pointing device (mouse, pen or the like), used by an operator to input information.

[0018]

The output device 113 is a device for visibly displaying registered product information on a screen or a paper medium. As the output device 113, a CRT display, a liquid crystal display, a printer device or the like, for example, can be used.

[0019]

The storage device 114 is a device for

storing a program executed by the computer 111 and a large quantity of data files. As the storage device 114, a magnetic disk, an optical disk, an optical magnetic disk, a semiconductor memory, or the like can

5 be used.

[0020]

In the storage device 114 of the electronic marketplace server 11, information concerning shipping products, such as varieties, ranks, amounts, prices,

10 and producers, provided by the shipping person client 13 is stored beforehand.

[0021]

The communication cable 115 is, for example, a telephone circuit for transmitting the information.

15 As the communication cable 115, a cable capable of transmitting a large quantity of data at high speed, such as an optical cable, is desirable. If in this case data are sent/received between the electronic marketplace server 11 and the communication network 14

20 by using a wireless communication circuit, a wireless communication circuit interface is provided instead of the communication cable 115.

[0022]

In order to provide the product information

25 stored in the storage device simultaneously to a large number of other systems and accept the auction ordering information, it is desirable to use a computer of high

speed and large capacity, a work station, or a personal computer as the electronic marketplace server 11.

[0023]

(2) Device configuration of purchasing person client 12

In the purchasing person client 12, an input device 122, an output device 123, a storage device 124, and the communication cable 125 are connected to a computer 121. Structures of them are fundamentally the same as those of the input device 112, the output device 113, the storage device 114, and the communication cable 115, and consequently the description of them will be omitted.

[0024]

(3) Device configuration of shipping person client 13

In the purchasing person client 13, an input device 132, an output device 133, a storage device 134, and the communication cable 135 are connected to a computer 131. Structures of them are fundamentally the same as those of the input device 112, the output device 113, the storage device 114, and the communication cable 115, and consequently the description of them will be omitted.

[0025]

(4) Device configuration of communication network 14

The device configuration of the communication network 14 can be formed by a high-speed communication

network, for example, such as a B-ISDN or an ATM-LAN. To be concrete, the communication network 14 is an open network represented by the Internet, or a network using a private circuit of personal computer communication or the like.

[0026]

The summary of the processing flow of the present embodiment will be hereafter described.

[0027]

First of all, the shipping person client 13 registers information of products to be shipped into the electronic market server 11.

[0028]

The electronic marketplace server 11 notifies the purchasing person client 12 of the registered product information by using, for example, the WWW (World Wide Web) or the like. Until predetermined time, the electronic marketplace server 11 accepts ordering information from the purchasing person client 12.

[0029]

By using a method which will be described later, the purchasing person client 12 procures product information from the electronic marketplace server 11. In the case where products desired to be bought have been found, the purchasing person client 12 creates auction ordering information by using a method which

will be described later, and registers it in the electronic marketplace server 11. If the predetermined time limit for ordering information has not been reached, the purchasing person client 12 can amend or

5 delete the registered auction ordering information by using a method which will be described later.

[0030]

The electronic marketplace server 11 manages and monitors the auction ordering information.

10 When the time limit for ordering information has been reached, the electronic marketplace server 11 terminates the acceptance of auction ordering information, and conducts an auction on the basis of the accepted auction ordering information by using a method which

15 will be described later. Then the electronic marketplace server 11 notifies the purchasing person client 12 of an auction result by using, for example, the WWW (World Wide Web), an electronic mail, or the like.

[0031]

20 By using a method which will be described later, the purchasing person client 12 procures the result of the auction from the electronic marketplace server 11.

[0032]

25 Hereafter, respective methods will be further described by referring to the drawing.

[0033]

By using a browser of the WWW installed in the computer 121, the purchasing person client 12 accesses the electronic marketplace server 11, and

5   procures the product information. A screen displayed to the browser is a product information screen 21 shown in FIG. 3. On the screen, a product number 211 and attribute information of the product are displayed as the product information. The product attribute infor-

10   mation includes a variety 212, standard and color 213, a growing area 214, a shipping person 215, an amount 216, a product image 219 such as a color photograph of the product. As information concerning the auction, the time limit for ordering information 217 and

15   scheduled auction end time 218 may also be included in the product information. In the case where a purchasing person serving as a bidder wants to purchase a displayed product, the purchasing person presses an ordering button 221 associated with the product with

20   the mouse.

[0034]

If the ordering button 221 on the product information screen 21 shown in FIG. 3 is pressed, an auction condition input editor 31 shown in FIG. 4

25   appears. In the auction condition input editor 31, a purchasing person ID 311 representing a bidder and an ordering product number 312 are displayed. As the

purchasing person ID, the electronic mail address and other specific identifiers, for example, of the purchasing person can be used. As for the product number 312, the product number 211 of the product selected on the screen of FIG. 3 is automatically stored. A rule list 313 forms a part of the ordering information sent to the electronic marketplace server 11. The rule list 313 includes a desired auction price which is a purchase condition of the product, a purchase amount, and a maximum allowed price in competition for the desired price. For example, the representation "purchase 80 boxes at ¥90 (+¥2)" in FIG. 4 indicates that the desired auction price is ¥90, the maximum allowed price in competition is +¥2, and the purchase amount is 80 boxes. In other words, the purchasing person desires to buy the product at ¥90, but up to ¥92 can be paid in the case of competition with another person. A field 314 is information specifying whether the purchasing person will participate in the auction after the purchasing person has conducted a successful bid once.

[0035]

A new rule registration button 321, a rule correction button 322, a rule deletion button 323, a rule priority raising button 324, a rule priority lowering button 325, a button 326 for transmitting the auction ordering information to the electronic marketplace server 11, and a button 327 for suspending the

auction ordering information creation are icons displayed on the screen.

[0036]

If the purchasing person presses the new registration button 321, or selects one of the rules displayed in the rule list 313 and thereafter presses the correction button 322, a rule editor shown in FIG. 5 is displayed and rule generation/correction is conducted. The rule editor 41 may be displayed by switching from the auction condition input editor 31, or they may be displayed on the same screen by using the multi-window technique.

[0037]

In the rule editor 41, a field 411 is used to select a price input method. Either the case where a price is specified or the case where the purchase at the lowest price is desired is specified. A field 412 located in the vicinity thereof is a field for inputting a price in the case where a price is specified. A field 413 is used to input a maximum allowance in competition. A field 421 is used to select an amount input method serving as a condition of the purchase amount. Three specification methods are prepared: all amount purchase, fixed amount purchase, and range designation purchase. The all amount purchase specifies the purchase of the all purchasable amount in the auction. The fixed amount purchase specifies the

purchase of a predetermined fixed amount. The range designation purchase specifies the purchase amount by using a range. Furthermore, in the vicinity of the field 421, a field 422 used to input the amount in the case of the fixed amount purchase and fields 423 and 424 used to input the range in the case of the range designation purchase are provided. A field 425 is used to specify whether a purchase is effected even if the available amount is less than the desired amount. Furthermore, on the screen, two icons, i.e., a button 431 for registration into the rule list, and a button 432 for suspending the rule generation/correction on the way are displayed.

[0038]

In the case where a rule is to be generated/corrected, it can be conducted by inputting the price condition to the fields 411 through 413, inputting the amount condition to the fields 421 through 425, and pressing a registration button 431. In the case where a rule is to be suspended on the way, the suspension button 432 is pressed.

[0039]

In the case where the specified range purchase is specified in the amount condition and the upper amount is not prescribed, i.e., in the case where the upper limit should be set equal to the remaining quantity, only the lower limit is inputted to the field

423. In the case where the lower limit is not to be prescribed, only the upper limit is inputted to the field 424.

[0040]

A generated rule can be deleted by using the deletion button 323. The generated rules are evaluated in the order shown in the rule list 313. For changing their priorities, therefore, priority change buttons 318 and 319 are used.

[0041]

By pressing the transmission button 326, auction ordering information is transmitted to the electronic marketplace server 11 and participation in the auction is registered. The auction ordering information thus transmitted contains at least the rule list 313 and a flag added thereto to specify whether the purchasing person participates in the auction once a successful bid has been conducted. The transmission of the ordering information at this time can be imple-mented by using the function of the known browser, for example, such as the Netscape Navigator 3.0 produced by the Netscape Communications company in U.S. In the case where a registration number, registration time, and the like are transmitted from the electronic marketplace server 11 after completion of the registra-tion, they may be displayed on the output device 123 or they may be stored in the storage device 124. The

registration number transmitted from the electronic
marketplace server 11 may be used as an inquiry key for
the electronic marketplace server 11 in the future. In
the case where the participation in the auction is to
5 be passed up, the suspension button 327 is pressed and
the auction ordering information creation is termi-
nated.

[0042]

By a registration situation screen 51 shown
10 in FIG. 6, the purchasing person client 12 procures
the auction registration situation from the electronic
marketplace server 11. On the registration situation
screen 51, an ordering product list 511 is displayed.
The ordering product list 511 is a list of the products
15 ordered by the purchasing person. On the screen, icons
of an auction ordering information display/correction
button 512, an order suspension button 513, an auction
result display button 514, and a button 515 for clos-
ing the registration situation screen 51 are also
20 displayed. In the ordering product list 511, a list
of ordering products is displayed. In the ordering
product list 511, the date and hour of registration
of auction ordering information, the subject product
number of the auction ordering information, and a flag
25 representing the auction completion state are dis-
played. However, detailed information other than them
may be displayed. As for such an ordering situation,

ordering information given from another purchasing person may be displayed.

[0043]

In the case where the auction ordering information is to be displayed/corrected, a subject ordering product is selected out of the ordering product list 511 and the display/correction button 512 is pressed. Thereupon, auction ordering information is displayed in the auction condition input editor 31. In the case where the auction ordering information is to be corrected, new auction ordering information is generated on the basis of the above described method and registered in the electronic marketplace server 11. In the case where ordering is to be suspended, a subject ordering product is selected out of the ordering product list 511 and the suspension button 513 is pressed.

[0044]

In the case where the auction result is to be displayed, a subject ordering product is selected out of the ordering product list 511 and the result display button 514 is pressed. Thereupon, an auction result screen 61 shown in FIG. 7 appears. The auction result screen 61 includes a successful bid result 611, a transaction process 612, a rule evaluation 613 contained in the auction ordering information, and a button 614 for closing the screen.

[0045]

In the successful bid result 611, a success-
ful bid result concerning the purchasing person and the
entire successful bid result are included. The entire
5 successful bid result includes hammer prices and the
quantities of the successful bids in the order of
success bid.

[0046]

In the transaction process 612, the price,
10 amount and situation are included. The situation
indicates the situation at that time. As the situa-
tion, "there are no desiring persons", "successful
bidder determined", "competition occurrence and price
rise", "competition continuation and price rise", or
15 "competition vanished and successful bidder deter-
mined", for example, is displayed. The message "there
are no desiring persons" indicates that there are no
purchasing persons. The message "successful bidder
determined" indicates that there are purchasing
20 persons and a successful bidder has been determined.
The message "competition occurrence and price rise"
indicates the occurrence of a competition and a price
rise caused to vanish the competition. The message
"competition continuation and price rise" indicates
25 that the competition is not vanished and the price has
risen for competition vanishment. And the message
"competition vanished and successful bidder determined"

indicates the vanishment of the competition, the determination of a successful bidder, and a rise of the price. In the case where a successful bid has been conducted, the successful bid amount is included.

[0047]

In the rule evaluation 613, the behavior of rules contained in the ordering information at the time of the auction are included. In the case where a successful bid has been conducted, the behavior at the time of the auction includes the hammer price and the successful bid amount. In the case where a successful bid has not been conducted due to a competition, the behavior at the time of the auction includes failed prices. In the case where a rule has not been used, the fact is included in the behavior.

[0048]

Monitoring of the auction ordering information in the electronic marketplace server 11 will now be described. In FIG. 8, an electronic marketplace monitor 71 is shown. In the electronic marketplace monitor 71, a monitored product number 711, a registered purchasing person list 712, number of registrations 713, a message column 714, a product change button 715, and an end button 716 are included.

[0049]

In the case where the monitored product is to be changed, the product change button 715 is pressed

and the change is conducted by using a product selection screen 81 shown in FIG. 9. On the product selection screen 81, a registered product number list 811, an OK button 812, and a cancel button 813 are

5 displayed. As for the change of the monitored product, a product to be monitored is selected out of the product number list 811 and the OK button 812 is pressed. In the case where the change is to be suspended, the cancel button 813 is pressed.

10 [0050]

For each of purchasing persons who registered the auction ordering information, the registered purchasing person list 712 includes a registration number 7121, a purchasing person ID 7122, transmission

15 time 7123 of auction ordering information from the purchasing person client 12, and reception time 7124 of the auction ordering information in the electronic marketplace server 11. In the number of registrations 713, the current number of registrations of the auction

20 ordering information is displayed. In the case where something should happen during monitoring, a predetermined message depending thereupon is displayed in a message 714.

[0051]

25 In the case where auction ordering information of a product to be monitored has been received during monitoring of the auction ordering information,

information 719 concerning the purchasing person who transmitted the newly received auction ordering information is displayed in the registered purchasing person list 712 as shown in FIG. 10. At the same time,

5 a message indicating that the auction ordering information has newly arrived is displayed in the message column 714. At this time, an operation for calling the attention of an operator, such as a flashing display of information concerning the newly registered purchasing

10 person, or a sound indication, may be conducted simultaneously.

[0052]

Execution of an auction and monitoring of the execution will now be described. FIG. 11 shows an

15 auction monitor 91, which is displayed on the output device 113 of the electronic market server 11 while an auction is being conducted. The auction monitor 91 includes a product number under auction 911, a list of purchasing persons who desire purchase 912, a number of

20 purchasing persons who desire purchase 913, a remaining number of products 914, a current price 915, a field for visually displaying the current price 915, and a transaction process 917. As the field 916, a circular shaped gauge is used in FIG. 11.

25 [0053]

For each of purchasing persons who desire purchase, the list of purchasing persons who desire

purchase 912 includes a registration number 9121, a
purchasing person state 9122, a purchasing person ID
9123, a desired amount 9124, and an allocated amount
9125. In the purchasing person state 9122, a state

5 such as "desire" representing a desire for purchase,
"abandon" representing abandonment of the purchase, or
"successful bid" representing that a successful bid has
been determined is displayed.

[0054]

10   The price 915 and the field 916 are moved in
response to a price change so as to be interlocked with
each other. The gauge of the field 916 is rotated in
the counterclockwise direction whenever the price rises
and rotated in the clockwise direction whenever the

15 prices falls. A price may be plotted on each indica-
tion point of the field 916 for more legibility. By
doing so, the person watching the auction monitor 91
can judge visually with more ease whether the price has
risen or fallen.

20   [0055]

The transaction process 917 includes the
contents contained in the transaction process 612 shown
on the auction result screen 61 in the purchasing
person client 12. Here, the purchasing person ID

25 who has conducted a successful bid is also included.
Furthermore, a message for an operator monitoring the
auction may also be included.

[0056]

Examples of the auction monitor 91 in the middle of the auction are shown in FIGS. 11, 12 and 13.

[0057]

5   In FIG. 11, registration numbers 1, 3 and 4, i.e., purchasing persons teramura, kosaka, and m-mori desire the purchase when the price has reached ¥90. The desired amounts are 150, 60 and 80, respectively. In the transaction process 917, the fact that a compe-

10   tition has occurred at ¥90 is displayed.

[0058]

From the state of FIG. 11, the price rises and the price has reached ¥93 as shown in FIG. 12. The current price 915 becomes 93, and the field 916 also

15   rises according to it. At the time point of ¥93, the purchasing persons teramura and m-mori having the register numbers 1 and 4 give up the purchase. As a result, the competition is vanished. In the transaction process 917, the fact that the competition has

20   been vanished at ¥93 is displayed. When the price is rising, the background color of the field 916 may be changed or a sound may be produced in order to empha-size the fact that the price is rising.

[0059]

25   The competition is vanished as shown in FIG. 12, and a successful bidder has been determined as shown in FIG. 13. The purchasing person kosaka of the

registration number 3 is a successful bidder. In the
transaction process 917, the fact that kosaka has
conducted a successful bid for 60 boxes at ¥93 is
displayed. The remaining quantity 914 has changed from
5   200 to 140.

[0060]

The auction method of the present invention
will now be described in further detail. FIG. 1 is a
processing flow of the entire automatic auction. Here,
10   an auction is conducted on the basis of "method of
descending price." In the "method of descending
price," the auction is conducted while the price is
being lowered.

[0061]

15   First of all, an initial price is set (step
1101). This may be set equal to a calculable value
such as a fixed value times the average successful bid
price of the previous day, a fixed value times the
average successful bid price of the past, or a fixed
20   value times the average successful bid price of the
same variety of another marketplace. Such a method
that a suspicion of price manipulation conducted by an
auctioneer is avoided and fairness can be maintained is
desirable.

25   [0062]

Subsequently, the price is lowered by a
predetermined fixed value (step 1102). In the case

where this price has become lower than the predeter-
mined lowest price, the auction is finished. In the
case where the price is not lower than the lowest
price, the processing proceeds to step 1104 (step

5   1103). At step 1104, a purchasing person desiring the
purchase is searched by using a purchase desiring pur-
chasing person search routine. If there is a purchase
desiring purchasing person, processing proceeds to step
1106. If there is not a purchase desiring purchasing

10   person, then processing proceeds to step 1102 (step
1105).

     [0063]

     At step 1106, it is determined whether there
is a competitive state by using a competitive state

15   judging routine. In the case where there is not a
competitive state, processing proceeds to step 1109
(step 1107). In the case of a competitive state, the
competitive state is vanished by using a competition
vanishing routine (step 1108). Subsequently, products

20   are allocated among purchasing persons desiring the
purchase by using a product allocation routine (step
1109). If there are remaining products, the processing
proceeds to the step 1102. If there are no products,
the auction is finished (step 1110).

25   The processing procedure of the purchase
desiring purchasing person search routine (step 1104 of
FIG. 1) will now be described by referring to FIG. 14.

In the case of the competitive state, operations as far as step 1206 are repeated for all purchasing persons desiring the purchase. In the case of noncompetitive state, operations as far as the step 1206 are repeated

5 for all registered purchasing persons excepting purchasing persons who did not participate in the auction after conducting a successful bid once and who conducted a successful bid once (step 1201).

[0064]

10 For all rules held by a subject purchasing person excepting rules fired once, operations as far as step 1204 are repeated (step 1202). Here, "firing" means participating in the auction, and means the case where the set price of the auction coincides with the

15 desired auction price or the case where the set price of the auction is contained in the highest possible price for the desired auction price.

[0065]

If the current price is greater than the sum

20 of the specified price of the subject rule and the highest possible price in competition in the competitive state and if the current price is greater than the specified price of the subject rule in the noncompetitive state, the processing proceeds to the step 1204.

25 Otherwise, the processing proceeds to step 1207 (step 1203).

[0066]

If the current price is greater than the
specified price of the subject rule, then the step 1203
is repeated until all rules held by the purchasing
person excepting fired rules are finished (step 1204).
If the repetitive processing is finished, the subject
purchasing person is excluded from purchase desiring
purchasing persons (step 1205). Until the loop condi-
tion of the step 1201 is finished, the processing is
repeated (step 1206).

If the current price is less than the
specified price of the subject rule at the step 1203, a
minimum desired amount and a maximum desired amount are
set on the basis of the subject rule. In other words,
if the amount specification of the subject rule is all
amount purchase, the minimum desired amount is set
equal to 0 and the maximum desired amount is set equal
to the remaining quantity. If the amount specification
of the subject rule is fixed amount purchase, the
minimum desired amount is set equal to 0 and the
maximum desired amount is set equal to the remaining
quantity. If the amount specification of the subject
rule is range designation purchase and its upper limit
value is not prescribed, then the minimum desired
amount is set equal to its lower limit value and the
maximum desired amount is set equal to the remaining
quantity. If the amount specification of the subject

rule is range designation purchase and its lower limit value is not prescribed, then the minimum desired amount is set equal to 0 and the maximum desired amount is set equal to its upper limit value. If the amount specification of the subject rule is range designation purchase and both its upper limit value and its lower limit value are not prescribed, then the minimum desired amount is set equal to the lower limit value and the maximum desired amount is set equal to the upper limit value (step 1207).

[0067]

It is determined whether the remaining quantity is less than the minimum desired amount set at the step 1207. If the remaining quantity is less than the minimum desired amount, then the processing proceeds to the step 1204. If the remaining quantity is greater than the minimum desired amount, then the processing proceeds to step 1209 (step 1208). The subject purchasing person is set to a purchase desiring purchasing person, and the firing rule is set to a subject rule (step 1209).

[0068]

The detailed processing procedure of the competitive state judging routine (step 1106 of FIG. 1) will now be described by referring to FIG. 15. First of all, the sum total of the minimum desired amounts of the purchasing persons desiring the purchase is

calculated, and it is denoted by sum total 1 (step

1301). The minimum desired amount is a value set at

the step 1207 of FIG. 14. If the remaining quantity is

less than the sum of the sum total 1 derived at the

5   step 1301 and the number of purchase desiring purchas-

ing persons each having a minimum desired amount equal

to zero, then the processing proceeds to step 1303.

Otherwise, the state is judged to be an allocatable

state and the judging routine is finished (step 1302).

10   [0069]

Among the purchase desiring purchasing per-

sons each having a nonzero desired amount, some persons

do not purchase according to the amount condition of

the firing rule if the amount is less than the minimum

15   desired amount. The sum total of the minimum desired

amounts of such purchase desiring purchasing persons

is calculated, and it is denoted by sum total 2 (step

1303).

[0070]

20   If the remaining quantity is less than the

sum of the sum total 2 derived at the step 1303, the

number of purchase desiring purchasing persons each

having a minimum desired amount equal to zero, and the

number of purchase desiring purchasing persons who are

25   included in the purchase desiring purchasing persons

each having a nonzero minimum desired amount and who

purchase even if the amount is less than the minimum

desired amount according to the amount condition of the
firing rule, then the state is judged to be a competi-
tive state and the judging routine is finished. Other-
wise, the processing proceeds to step 1305 (step 1304).

5   [0071]

        For the purchase desiring purchasing persons
who are included in the purchase desiring purchasing
persons each having a nonzero minimum desired amount
and who purchase even if the amount is less than

10   the minimum desired amount according to the amount
condition of the firing rule, the minimum desired
amount is set equal to 0. The state is judged to be an
allocatable state, and the judging routine is finished
(step 1305).

15   [0072]

        The detailed processing procedure of the
competition vanishing routine (step 1108 of FIG. 1)
will now be described. In the conventional auction
method, the auction is conducted by gradually lowering

20   the price. Once a competitive state is brought about,
however, the auction is conducted by gradually raising
the price in the present invention.
        [0073]

        If a competition has occurred, the price is

25   raised by a predetermined value (step 1401). If a
resultant price has exceeded a predetermined fixed
reference value, the processing proceeds to step 1407.

If the resultant price has not exceeded, the processing
proceeds to step 1403 (step 1402).

[0074]

By using the purchase desiring purchasing
person search routine shown in FIG. 14, a purchase
desiring purchasing person is searched for (step 1403).
If there is a purchase desiring purchasing person, the
processing proceeds to step 1405. If there is not a
purchase desiring purchasing person, the processing
proceeds to step 1407 (step 1404). Subsequently, by
using the competitive state judging routine of FIG. 15,
it is determined whether the current state is a com-
petitive state (step 1405).

[0075]

In the case of the competitive state, the
processing proceeds to step 1401. If the current
state is not the competitive state, the processing is
finished (step 1406). In the case where the processing
has proceeded to the step 1407, the immediately preced-
ing price state is restored. In this state, returning
the state concerning the purchase desiring purchasing
person to the original state is also included.

[0076]

The processing flow of the product allocation
routine (step 1109 of FIG. 1) will now be described by
referring to FIGS. 17 and 18. In the ensuing process-
ing, the minimum desired amount and the maximum desired

amount are ones set at the step 1207 of the purchase desiring purchasing person search routine shown in FIG. 14.

[0077]

5   For all of the purchase desiring purchasing persons, the processing as far as step 1507 is repeated in the order of decreasing minimum desired amount, and in the order of time of registration of the auction ordering information to the electronic marketplace

10   server 11 in the case where the minimum desired amounts are the same (step 1501). If the minimum desired amount of the subject purchasing person is not 0, then the processing proceeds to step 1503. If the minimum desired amount of the subject purchasing person is 0,

15   then the processing proceeds to step 1506 (step 1502). If the remaining quantity is at least the minimum desired amount of the subject purchasing person, then the processing proceeds to step 1504. If the remaining quantity is less than the minimum desired amount of the

20   subject purchasing person, then the processing proceeds to step 1508 (step 1503).

[0078]

      The minimum desired amount is allotted to the subject purchasing person, and the remaining quantity

25   is decreased by the minimum desired amount (step 1504). If the amount specification of the firing rule of the subject purchasing person is not the fixed amount

purchase, then the processing proceeds to the step 1506. In the case of the fixed amount purchase, the processing proceeds to the step 1507 (step 1505). The subject purchasing person is set to a variable amount purchasing person (step 1506).

[0079]

Until the above described condition of the loop 1 is finished, the processing beginning from the step 1501 is repeated (step 1507). At step 1508, the processing proceeds to step 1509, in the case where the subject purchasing person purchases according to the firing rule of the subject purchasing person even if the amount is less than the desired amount. In the case where the subject purchasing person does not purchase, the processing proceeds to step 1507. All of the remaining quantity is allotted to the subject purchasing person (step 1509), and the processing is finished.

[0080]

If at the step 1507 there is a remaining product and there is a variable amount purchasing person, then the processing proceeds to step 1511. If there is not a remaining product or there is not a variable amount purchasing person, then the processing is finished (step 1510).

[0081]

As a loop 2, processing as far as step 1516

is repeated for all of the variable amount purchasing persons (step 1511). The amount allotted to the subject purchasing person is increased by one (step 1512). If the amount allotted to the subject purchasing person

5 is equal to the maximum desired amount, the processing proceeds to step 1514. If the amount allotted to the subject purchasing person is not equal to the maximum desired amount, the processing proceeds to step 1515 (step 1513).

10   [0082]

At step 1514, the subject purchasing person is not set to a variable amount purchasing person. If there is a remaining product, the processing proceeds to step 1516. Otherwise, the processing is finished

15 (step 1515). At step 1516, the processing is repeated until the processing is finished for all of the variable amount purchasing persons.

[0083]

Heretofore, detailed embodiments have been

20 described. The concrete automatic auction method will now be described by referring to FIGS. 19 and 20.

FIG. 19 shows a condition 2010 in the automatic auction. FIG. 20 shows "registered purchasing persons and their ordering information" 2020. In the

25 auction condition 2010, the quantity, initial price, increment of descending price, lowest price, increment of ascending price in competition, and highest

ascending price are included. For each of the regis-
tered purchasing persons, the "registered purchasing
persons and their ordering information" 2020 includes
an auction rule and a flag indicating whether the

5 registered purchasing person participates in the
auction after the person has conducted a successful bid
once.

[0084]

On the basis of the conditions included in

10 the auction condition 2010, the electronic market place
server 11 conducts an auction by using the "registered
purchasing persons and their ordering information"
2020. Hereafter, contents of the operation and pro-
cessing for each price will be described.

15 [0085]

(1) ¥100 to ¥96

From ¥100, the price is lowered by the
predetermined value (¥1). Even when the price has been
lowered to ¥96, there are no purchasing persons desir-

20 ing the purchase. Therefore, the price is further
lowered.

[0086]

(2) ¥95

A rule 2021 of a purchasing person A is

25 fired. In other words, the purchasing person A appears
as the purchase desiring purchasing person who coin-
cides with the price condition (¥95). While the

remaining quantity is 200 boxes, the desired quantity
of the purchasing person A is 60 boxes. At this time,
therefore, a competition does not occur. Accordingly,
the desired amount of 60 boxes is allotted to the
5 purchasing person A, and the remaining quantity is set
to 140 boxes. As for the auction reopening price, the
successful bid price ¥95, a price ¥94 next to the
successful bid price, or a price raised by a constant
ratio may be used. It is now assumed that the auction
10 is reopened with the successful bid price.

[0087]

(3) ¥95 to ¥91

The price is lowered by the predetermined
increment of descending price (¥1). Even when the
15 price has been lowered to ¥91, there are no purchasing
persons desiring the purchase. Therefore, the price
is further lowered. The rule 2021 of the purchasing
person A does not become the subject of the evaluation,
because its transaction has already been settled.

20   [0088]

(4) ¥90

A rule 2022 of a purchasing person B and a
rule 2023 of a purchasing person C are fired. As the
purchase desiring purchasing person, the purchasing
25 person B and the purchasing person C appear. While the
remaining quantity is 140 boxes, the desired quantities
are 100 boxes and 80 boxes, respectively. Since the

total desired quantity is thus 180 boxes, a competition occurs. By raising the price by the predetermined increment of ascending price in competition (¥1), therefore, the competition is vanished.

5   [0089]

(5) ¥91 and ¥92

The highest possible price in competition is ¥2 in the rule 2022 of the purchasing person B. The highest possible price in competition is ¥4 in the

10   rule 2023 of the purchasing person C. Even if the price is raised to ¥91, and then ¥92, therefore, both the purchasing person B and the purchasing person C desire the purchase. As a result, the competition is not vanished, and the price is further raised.

15   [0090]

(6) ¥93

The price exceeds the highest possible price in competition (+¥2) in the rule 2022 of the purchasing person B. Therefore, the purchasing person B gives

20   up the purchase, and the competition is vanished. As for the purchasing person C, the price is within the highest price in competition (+¥4) in the rule 2023 of the purchasing person C. Since it satisfies the purchase desire, therefore, the transaction is settled.

25   As a result, the desired quantity of 80 boxes is allotted to the purchasing person C, and the remaining quantity becomes 60 boxes.

[0091]

(7) ¥93 to ¥89

Due to the competitive state, the price was raised once. Since the competition has been vanished,
auction is conducted again with the remaining quantity. At the reopening price ¥93, there are no purchasing persons desiring the purchase. Therefore, the price is lowered by the predetermined increment of descending price (¥1). When the price is lowered to ¥90, it coincides with the price specified by the purchasing person B. Since the remaining quantity is 60 boxes, however, it does not coincide with the purchase condition of the purchasing person B. Therefore, the transaction with the purchasing person B is not settled. Accordingly, the price is further lowered.

[0092]

(8) ¥88

Since there are no purchasing persons desiring the purchase at ¥89, the price is further lowered. Thereupon, a rule 2024 of a purchasing person D is fired, and the purchasing person D appears as the purchasing person desiring the purchase. While the remaining quantity is 60 boxes at this time, the minimum desired amount is 50 boxes. Therefore, a competition is not caused. The minimum desired amount of 50 boxes is first allotted to the purchasing person D, and the purchasing person D is set as the variable

amount purchasing person. Since the remaining quantity is 10 boxes, the remaining quantity of 10 boxes is allotted to the purchasing person D which is the variable amount purchasing person. As a result, the

5 purchasing person D purchases 60 boxes. Accordingly, the remaining quantity becomes 0 box, and the auction is finished.

[0093]

In the present embodiment, the purchasing

10 person client 12 registers rules concerning the auction into the electronic marketplace server 11 as the auction ordering information. The electronic market-place server 11 conducts the auction on the basis of the auction ordering information. Therefore, it

15 becomes unnecessary for the purchasing person client 12, i.e., the bidder to stay before the auction terminal at the time of the auction.

[0094]

By making the rule include the purchase

20 conditions, it becomes possible to automatically and flexibly cope with the situation change at the time of the auction. Thus the on-line and real time properties are not necessarily required. As a result, auction transactions become possible on an open network on

25 which it is difficult to assure the on-line and real time properties.

[0095]

A countermeasure to the security will now be described. For implementing a safe auction, it becomes necessary to prevent a malicious third party from participating in the transaction and keep data concerning the auction secret (i.e., prevent wiretapping and falsifying). For this purpose, the following methods are used.

[0096]

First of all, individual authentication is conducted by sending the purchasing person ID and the password from the purchasing person client 12 to the electronic marketplace server 11 at least one timing instant such as at the time of connection to the electronic marketplace server 11, before the procurement of the product information, before the transmission of the auction ordering information, before the procurement of the auction ordering situation, before the modification of the auction ordering information, before suspension of the auction ordering, and before the procurement of the auction result.

[0097]

When a purchasing person client 12 is registered as a purchasing person of the electronic marketplace server 11, the purchasing person ID and the password of the purchasing person are sent via telephone, FAX, mail or the communication network 14.

[0098]

Subsequently, encryption processing is effected for various kinds of information exchanged between the electronic marketplace server 11 and the

5   purchasing person client 12. As for the encryption method used in the encryption processing, either of the public key encryption system such as the RAS and the common key encryption system such as the DES may be used. As for the allocation of the encryption key, it

10 is sent to a purchasing person client 12 via a storage medium such as an IC card or a floppy disk or the communication network 14 when the purchasing person client 12 has been registered as a purchasing person of the electronic marketplace server 11.

15   [0099]

Owing to the countermeasures heretofore described, it becomes possible to prevent a third party who does not know the purchasing person ID and the password form participating in the transaction.

20 Furthermore, it becomes possible to prevent a person having no encryption key from conducting wiretapping for data concerning the auction and falsifying the data concerning the auction.

[0100]

25 [Effects of the Invention]

As heretofore described in detail, the present invention solves the above described problems

of the conventional technique and makes it unnecessary for bidders to stay before auction terminals at the time auction. In addition, auction transactions become possible on an open network on which it is difficult to

5 assure the on-line and real time properties. Thus the present invention brings about significant effects.

[Brief Description of Drawings]

   [Fig. 1]

         FIG. 1 is an entire processing flow diagram

10 of an automatic auction method in an embodiment of the present invention.

   [Fig. 2]

         FIG. 2 is a system configuration diagram showing an embodiment of the present invention.

15   [Fig. 3]

         FIG. 3 is a product information providing screen in an embodiment of the present invention.

   [Fig. 4]

         FIG. 4 is an auction condition input editor

20 in an embodiment of the present invention.

   [Fig. 5]

         FIG. 5 is an auction rule editor in an embodiment of the present invention.

   [Fig. 6]

25   FIG. 6 is an auction ordering situation screen in an embodiment of the present invention.

[Fig. 7]

FIG. 7 is an auction result screen in an embodiment of the present invention.

[Fig. 8]

5   FIG. 8 is an electronic marketplace monitor in an embodiment of the present invention.

[Fig. 9]

FIG. 9 is a selection screen of products monitored by the electronic marketplace monitor in an

10   embodiment of the present invention.

[Fig. 10]

FIG. 10 shows the electronic marketplace monitor in the case where there is a new registrator in an embodiment of the present invention.

15   [Fig. 11]

FIG. 11 shows an auction monitor in competition in an embodiment of the present invention.

[Fig. 12]

FIG. 12 shows the auction monitor at the time

20   of vanishment of competition in an embodiment of the present invention.

[Fig. 13]

FIG. 13 shows the auction monitor at the time of a successful bid in an embodiment of the present

25   invention.

[Fig. 14]

FIG. 14 is a processing flow diagram of a

purchase desiring purchasing person search routine showing an embodiment of the present invention.

[Fig. 15]

FIG. 15 is a processing flow diagram of a
5 competition judging routine showing an embodiment of the present invention.

[Fig. 16]

FIG. 16 is a processing flow diagram of a competition vanishing routine showing an embodiment of
10 the present invention.

[Fig. 17]

FIG. 17 is a processing flow diagram of a product allocation routine showing an embodiment of the present invention.

15 [Fig. 18]

FIG. 18 is a processing flow diagram of a product allocation routine showing an embodiment of the present invention and is a continuation of FIG. 17.

[Fig. 19]

20 FIG. 19 shows auction conditions showing an embodiment of the present invention.

[Fig. 20]

FIG. 20 shows registered purchasing persons and ordering information showing an embodiment of the
25 present invention.

[Description of Reference Numerals]

11 ... electronic market server, 111 ... computer, 112 ... input device, 113 ... output device, 114 ... storage device, 115 ... communication cable, 12 ... purchasing person client, 121 ... computer, 122 ... input device, 123 ... output device, 124 ... storage device, 125 ... communication cable, 13 ... shipping person client, 131 ... computer, 132 ... input device, 133 ... output device, 134 ... storage device, 135 ... communication cable, 14 ... communication network.